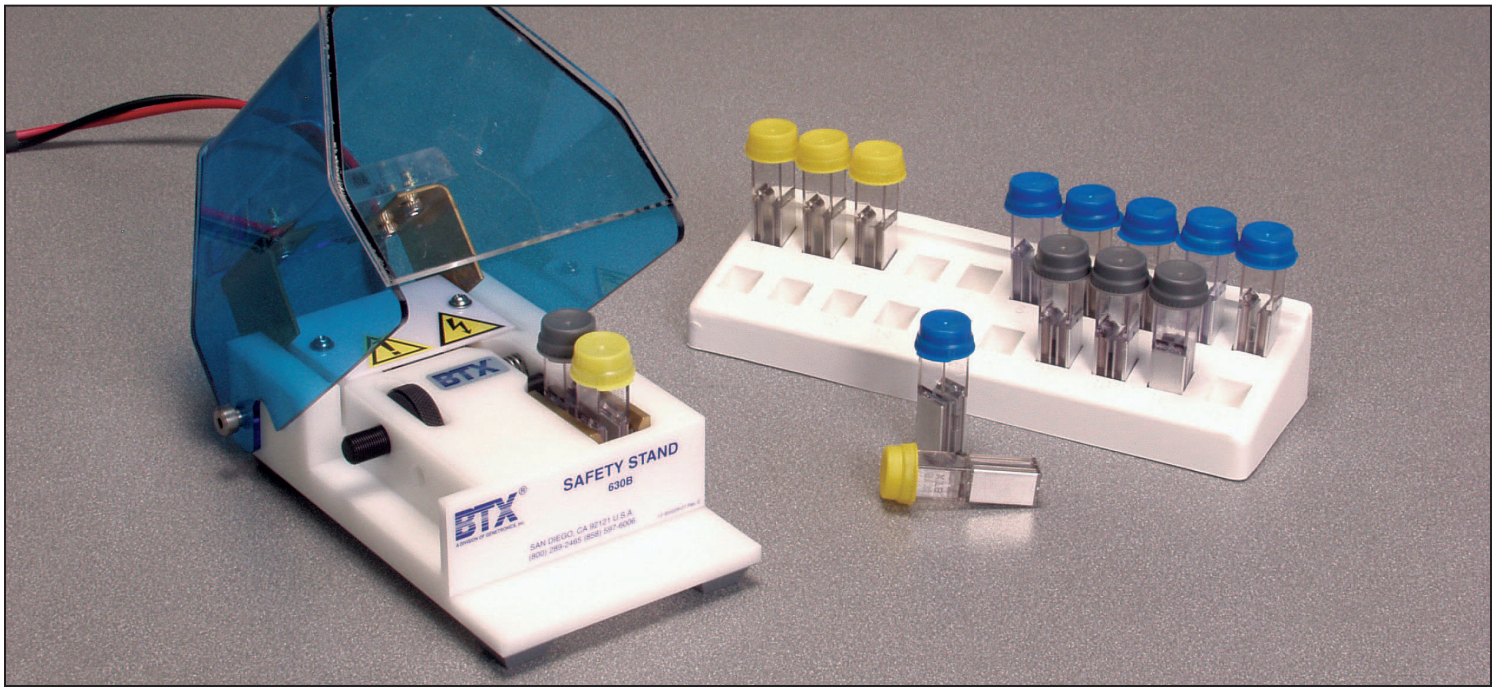
Safety Stand

USER'S MANUAL

BTX®
HARVARD APPARATUS
The Electroporation Experts



INTRODUCTION

The BTX Safety Stand is a safety device for use with the disposable cuvettes and the flatpack chambers. Its unique design ensures that no current can be delivered unless the lid is closed therefore protecting the user from high voltages. Up to two cuvettes can be electroporated at once, thus decreasing experimentation times. It is compatible with the BTX electroporators listed below.

IMPORTANT: Read all Instructions, Warnings and Precautions prior to use.

FOR RESEARCH PURPOSES ONLY

Compatible BTX electroporators*
ECM® 830
ECM® 630
ECM® 399
ECM® 2001
***Note:** For compatibility with older models, call BTX technical support

Order No.	Model	Description
45-0207	630B	Safety Stand

Safety Stand

GENERAL INFORMATION

Warranty

BTX/Harvard Apparatus warranties this BTX Safety Stand for a period of 90 days from date of purchase. At its option, BTX/Harvard Apparatus will repair or replace the item if it is found to be defective as to workmanship or material. This warranty does not extend to damage resulting from misuse, neglect, or abuse, normal wear and tear, or accident. This warranty extends only to the original customer purchase.

IN NO EVENT SHALL HARVARD APPARATUS BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES. Some states do not allow exclusion or limitation of incidental or consequential damages so the above limitation or exclusion may not apply to you. **THERE ARE NO IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE, OR OF ANY OTHER NATURE.** Some states do not allow this limitation on an implied warranty, so the above limitation may not apply to you. If a defect arises within the 90 day warranty period, promptly contact: **BTX/Harvard Apparatus, 84 October Hill Road, Holliston, Massachusetts 01746-1388** using our toll free number **1-800-272-2775 (Outside the U.S. call 1-508-893-8999).** Goods will not be accepted for return unless an RMA (Return Materials Authorization) number has been issued by our customer service department. The customer is responsible for shipping charges. Please allow a reasonable period of time for completion of repairs or replacement and return. If the unit is replaced, the replacement unit is covered only for the remainder of the original warranty period dating from the purchase of the original device. This warranty gives you specific rights, and you may also have other rights which vary from state to state.

Note: BTX electrodes are not recommended for use with power supplies or cables from other manufacturers. Such use is completlely at the customer's own risk as it may result in damage, create unsafe conditions and will immediately void the 90 day warranty.

IMPORTANT: Read all Instructions, Warnings and Precautions prior to use.

Technical & Customer Service

BTX® is the ultimate resource for technical information on the use of high voltage bacterial transformation and general electroporation of molecules and drugs into cells. We constantly track and monitor scientific publications in this area. Our Technical Service group extracts and enters pertinent information, such as results and parameters from these papers into a Protocol database. This database is available via the BTX website. Please visit www.btxonline.com. For technical assistance, additional information or an inquiry/request for repair service, contact BTX/Harvard Apparatus Technical Support/Customer Service Group at:

BTX®
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84 October Hill Road
Holliston, MA 01746-1388 U.S.A.
Toll Free: 1-800-272-2775 (U.S. only)
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Fax: 1-508-429-5732
E-mail: techsupport.btx@harvardapparatus.com
Internet: www.btxonline.com (click on customer service)

If outside the United States and Canada: call **1-508-893-8999** or contact your nearest BTX Distributor. A complete list of distributors is on our website.

GENERAL SAFETY INFORMATION

Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it. To avoid potential hazard, use this product only as specified. Only qualified BTX personnel should perform service procedures.

To Prevent Hazard or Injury:

ARCING CAN OCCUR AT HIGH VOLTAGES
An unfavorable combination of parameters such as high voltage settings and a small sample volume with a highly conductive medium might lead to flashover between the electrodes (ARC) and/or explosive evaporation of the medium. Reduce voltage or pulse length to avoid repeating this condition.

DO NOT OPERATE WITH SUSPECTED FAILURES
If you suspect there is damage to the product, have it inspected by qualified BTX service personnel.

DO NOT CONTACT ELECTRODES
To avoid fire or shock hazard, observe all ratings and markings on the product or in this manual before using the device.

AVOID EXPOSURE TO CONTACT
Do not insert fingers or try to remove electrode or sample during pulsing sequence.

WEAR PROPER EYE PROTECTION DURING ELECTROPORATION

DO NOT OPERATE IN AN EXPLOSIVE ENVIRONMENT

DO NOT OPERATE IN WET/DAMP CONDITIONS

Safety Terms and Symbols:

Terms that appear in this manual:

WARNING. Warning statements identify conditions or practices that could result in injury or loss of life.

CAUTION. Caution statements identify conditions or practices that could result in damage to these products or other property.

Symbols that may appear on the products:

Danger High Voltage

Attention Refer to Manual

Protective (Earth) Terminal

Functional Ground Terminal

Safety Stand

OPERATION: GETTING STARTED

WARNING HIGH VOLTAGE

Make sure the BTX electroporator is switched off before continuing.

1. Attach the safety stand cables to the output on the rear or the front panel of the electroporator depending on the BTX electroporator being used.
2. Using aseptic technique, pipette the correct volume of cell suspension and reagents into the cuvette or flatpack chamber. If using a cuvette replace the cap.
3. Open the safety stand shield and place the cuvette or flatpack chamber between the metal contacts. Adjust the distance between the contacts using the black roller. (Note: the adjustment will remain the same after the first time, do not readjust the roller with every cuvette, however check contact periodically to ensure good current flow). Close the shield.
4. Switch on the BTX electroporator. Check that all instrument settings and connections are correct. Deliver the electroporation pulse by pressing the appropriate START or PULSE button depending on the BTX electroporator being used.
5. After the pulse is delivered, remove the cuvette or flatpack chamber from the safety stand. Use a pipette to remove the pulsed cells. Treat the pulsed cells according to the protocol.
6. Discard the cuvette, pipette and/or flatpack chamber in a biohazard container. Refer to your country's waste management organization for proper disposal practices.
7. Unplug safety stand from electroporator. Clean plastic lid and metal contacts with ethanol and deionized water as needed.

APPENDIX A: SPECIFICATIONS

Safety Stand Electrical & Technical Specifications

Standard Capabilities*:

Voltage Range	0 to 3000 VDC; 0 to 250 VAC
Frequency	1 MHz
Pulse Length/Time Constants Range	10 µsec to 10 sec
Pulse Number Range	1 to 99 (depending on voltage)
Operating Temperature	5º to 40ºC
Intended Use	Indoor use only
Relative Humidity	20 to 80%
Maximum Altitude	2,000 m (6,562 ft)
Pollution Degree	II
Insulation Category	CAT I

Physical Characteristics:

Overall Dimensions L x W x D	12.7 x 10.2 x 17.8 cm (5 x 4 x 7 in)
Weight	1 kg (2.3 lbs)

Compatibility:

Generators**	ECM® 399, 630, 830 and 2001
Monitoring Monitoring System	The Enhancer 3000®

***Note:** Depending on buffer composition, volume, and generator capability

****Note:** For compatibility with older models, call BTX technical support.

APPENDIX B: REPLACEMENT PARTS

Order No.	Model	Description
45-0207	630B	Safety Stand
45-0213	BT630	Acrylic Safety Stand Cover
45-0215		Metal Replacement Kit
45-0208	660	Cuvette Rack
45-0140	613	Bulk Pack of Cuvettes, 1 mm gap, 24 pkgs. of 100
45-0141	623	Bulk Pack of Cuvettes, 2 mm gap, 24 pkgs. of 100
45-0142	643	Bulk Pack of Cuvettes, 4 mm gap, 24 pkgs. of 100
45-0125	620	Disposable Cuvettes, 2 mm gap, pkg. 50
45-0126	640	Disposable Cuvettes, 4 mm gap, pkg. 50
45-0109	485	Flatpack Chambers, 0.56 mm gap, pkg. 50
45-0110	486	Flatpack Chambers, 1.53 mm gap, pkg. 50
45-0059	VIP3000SC	The Enhancer 3000® Monitoring System

Meets requirements of Directive 89/336/EEC for Electromagnetic Compatibility (EC) and Low-Voltage Directive 72/23/EEC for Product Safety.

APPENDIX C: TROUBLESHOOTING

Please contact BTX Technical Service at any of the numbers listed below in the event of any failure.

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A Division of Harvard Apparatus
84 October Hill Road
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Toll Free: 1-800-272-2775 (US only)
Phone: 1-508-893-8999
Fax: 1-508-429-5732
E-mail: techsupport.btx@harvardapparatus.com
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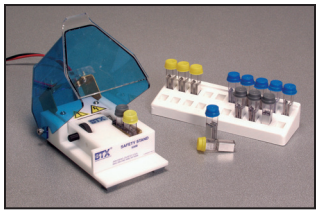


Safety Stand, Model 630B

CAUTION
FOR RESEARCH USE ONLY NOT FOR CLINICAL USE ON PATIENTS

WEEE/RoHS Compliance Statement

EU Directives WEEE and RoHS

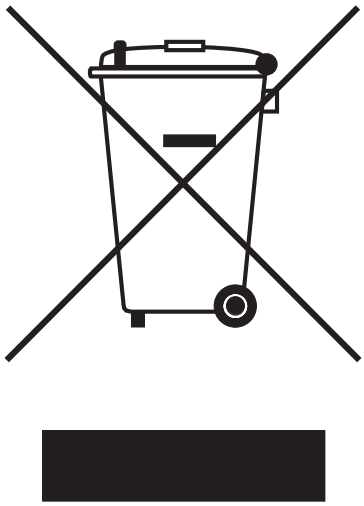
To Our Valued Customers:

We are committed to being a good corporate citizen. As part of that commitment, we strive to maintain an environmentally conscious manufacturing operation.

The European Union (EU) has enacted two Directives, the first on product recycling (Waste Electrical and Electronic Equipment, WEEE) and the second limiting the use of certain substances (Restriction on the use of Hazardous Substances, RoHS). Over time, these Directives will be implemented in the national laws of each EU Member State.

Once the final national regulations have been put into place, recycling will be offered for our products which are within the scope of the WEEE Directive. Products falling under the scope of the WEEE Directive available for sale after August 13, 2005 will be identified with a "wheelie bin" symbol.

Two Categories of products covered by the WEEE Directive are currently exempt from the RoHS Directive – Category 8, medical devices (with the exception of implanted or infected products) and Category 9, monitoring and control instruments. Most of our products fall into either Category 8 or 9 and are currently exempt from the RoHS Directive. We will continue to monitor the application of the RoHS Directive to its products and will comply with any changes as they apply.



- **Do Not Dispose Product with Municipal Waste**
- **Special Collection/Disposal Required**

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Publication 5502-002-REV-CS